

REMARKS

Claims 1 - 21 are in this application and are presented for consideration. By this Amendment, Applicant has amended each of the original claims except for claim 9. Independent claims 1 and 10 have been revised to clarify important features of the combination according to the invention. Other claims have been revised to further clarify further possible features according to the invention.

Claims 1 - 3, 5, 6 and 8 - 11 have been rejected as being anticipated by Roch et al. (U.S. 5,138,667). The rejection is based on the position that Roch et al. teaches each feature as claimed.

The Roch et al. reference fails to teach and fails to suggest the combination as highlighted in the claims as presented.

Roch et al. discloses a method in which a registration mark is printed in an area on a web-like material 2. The registration mark is printed in an area that is reserved for print accuracy control signs, for example in an area situated between two motifs being printed on the web or in an area situated laterally on the web relative to the area in which the motifs are printed. The Roch et al. reference teaches using this registration mark in a process in which this is sensed and compared to a virtual registration mark to determine if there is offset positioning as to a geometric center. As such, Roch et al. teaches a very different process as compared to the process claimed. Roch et al. fails to teach and fails to suggest providing a process in which the image to be printed is considered in advance, namely prepress data and using a predetermined criteria which is adapted to the conditions of the image to be printed, a position

a position of a registration mark is determined wherein the position is random within a region established by the criteria adapted to the conditions of the image to be printed. This combination of features is clearly neither taught nor suggested by Roch et al.. Roch et al. clearly fails to teach and fails to suggest that the register marks can be placed at a random point. Instead, Roch et al. provides a specific direction of the person of ordinary skill in the art as to the position of such a mark. The Roch et al. reference clearly fails to teach and clearly fails to suggest a free adaption of the positioning of the reference marked to the image, based on an advanced knowledge of the image, namely from the prepress data. Roch et al. fails to teach each feature as claimed and instead directs the person of ordinary skill in the art to a system which relies on a predetermined region for the reference mark.

Claims 4 and 7 have been rejected based on Roch et al. as the primary reference and further in view of secondary references Takahashi et al. (U.S. Patent 5,444,525) and Kawakami et al. (U.S. 5,613,261). However, the secondary references also fail to teach and fail to suggest the crux of Applicant's invention. The references as a whole fail to teach a system which combines a free adaption of the registration mark to the image, where there is a randomness in placing but based on considerations as to acceptable spaces in the image (criteria adapted to the image) wherein the random positioning considers what space is available for such positioning. Certainly Roch et al. fails to teach and fails to suggest the combination claimed.

As indicated in Applicant's introduction, Roch et al. represents prior art which goes in a different direction from Applicant's invention.

Applicant has become aware of prior art which is believed to be more pertinent to the

combination of features as claimed. These references were cited in a corresponding German Examination Proceeding and include WO 95/00336 (DE 43 21 179 A1) which was discussed at paragraph 8 in the specification. Additionally, DE 43 28 026 A1 (corresponding to U.S. 5,625,758) has also been cited.

The prior art as a whole fails to teach the crux of Applicant's invention, namely the novel process in which a device is used to make possible the provision of a registration mark for useful checking and the follow-up simple and certain checking of the quality of the printed web. According to the invention a process and device are provided for determining the position and the shape of at least one registration mark on a web to be printed on with the features for using this for checking quality. The process is based on obtaining the image to be printed including obtaining prepress data of the image to be printed from digital or analog image data of a preliminary printing stage or a print original. A predetermined criteria is established for arranging the registration mark with this being adapted to the conditions of the image to be printed based on the prepress data. The position and the shape of at least one registration mark in the image to be printed is determined using the prepress data. The position of the mark in the actual print image is arranged randomly in regions of the print image established based on the criteria adapted to the conditions of the image to be printed

Schneider et al. (US 5,625,758 / DE 43 28 026 A1) discloses that control elements are needed in a printing process which is controlled mechanically. These control elements are ink-measuring fields for ink control and various marks for controlling the various registers. These marks are also printed for this purpose or the marks may instead be certain areas of the subject

(column 5, lines 25 through 33). Furthermore, the citation Schneider et al. discloses that the data about these control elements come from the preliminary stage (column 5, lines 33 through 38). In column 6, line 4 ff., it is disclosed that register marks can be integrated at a favorable point on the subject. The exact position and geometry are then sent to the register-measuring and control system of the printing press. In an exemplary embodiment, register marks are expressed as positive text printed in a variety of colors, i.e., letters are used as register marks with printing ink on white paper. For this, text elements selected in the preliminary printing stage are composed of a plurality of colors. The various ink components must then be brought into line in the press to control the register (column 6, lines 9 through 19). Especially unremarkable text elements, such as a period, colon, semicolon, hyphen, mark of division, or the like are preferably used. Any combination of ink components, which do not produce a deviation in color that is all too great compared to the adjacent elements, which are printed with the original color, is conceivable for use as such text elements (column 6, lines 27 through 34). It is disclosed in claim 11 of Schneider et al. that text elements selected in the preliminary printing stage, which are composed of a plurality of colors, are selected as the register marks.

It is Applicant's position, however, that Schneider et al. Fails to teach and fails to suggest the register marks can be placed at a random point. Instead, Schneider et al., teaches providing a text element, that is selected from a text (Schneider et al.; column 6, lines 20 through 39). The position of the mark is thus determined by the position of the text element and cannot be determined randomly. The selection of the text elements, of course, represents a certain local randomness. However, the selection as described as to some letters at some

points of the text is not a random positioning of a text mark. The text mark is then adapted to the conditions of the image to be printed, i.e., the shape and position of the mark are adapted to the text element, i.e., the mark now has the shape and size and position of the text element. Schneider et al. fails to teach and fails to suggest a free adaptation to the image, but rather directs the person of ordinary skill in the art to only an exact reproduction of an already existing field of the image.

Kipphan et al. (US 6,119,594 / DE 43 21 179), which was acknowledged as state of the art as WO 9500336 A1 on page 3 in the specification of the present patent application, discloses, on page 5, first paragraph, extending to page 6, third paragraph, that measuring points are determined by means of a calculator. This calculator has taken image data from e.g., a data memory in order to manage or to control, e.g., the coloration, the wetting agent guide and the register by comparing the actual values with the set values (image data from the data memory).

However, Kipphan et al. fails to teach or suggest the shape of the mark being determined, and that the at least one mark is adapted to the conditions of the image to be printed, considering criteria.


The prior art as a whole fails to teach and fails to suggest the combination of features wherein the image to be printed (prepress data) is considered in advance and a shape and position of a registration mark are determined based on the print image wherein based on criteria of space (including for example white edge region and other known criteria), the registration mark is randomly positioned based on the determined shape and space. This is

coupled with other aspects of the invention including using this position and shape data to check quality by timing a sensor reading or positioning a sensor for the position and shape as determined. The invention provides a different approach which the prior art as a whole fails to teach and which the prior art does not suggest to the person of ordinary skill in the art.

Applicant respectfully requests that the Examiner reconsider the rejections in view of this response, particularly in view of the claims as now presented. Applicant further requests that the Examiner consider the prior art which is made of record with this response based on this prior art coming to Applicant's attention from the corresponding German Examination Proceeding.

Further and favorable action on the merits is requested.

Respectfully submitted
for Applicant,

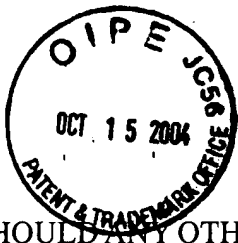
By: 
John James McGlew
Registration No. 31,903
McGLEW AND TUTTLE, P.C.

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Enclosed: PTO-1449 form
copies of (4) References
Petition for Three Month Extension of Time
Credit Card Payment Form

DATED: October 15, 2004
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SCARBOROUGH, NEW YORK 10510-0827
(914) 941-5600



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